

Agreements for cooperation in the area of space with 27 countries/space agencies so far. These are Australia, Brazil, Brunei Darussalam, Canada, China EUMETSAT, European Space Agency, France, Germany, Hungary, Indonesia, Israel, Italy, Japan, Mauritius, Mongolia, Myanmar, Norway, Peru, The Russian Federation, Sweden, Thailand, The Netherlands, Ukraine, United Kingdom, United States of America and Venezuela.

(c) The major achievement of India in the field of space is the self-reliant development of world-class satellites and launch vehicles and utilising the space systems in several areas relevant to national development. India has established two operational space systems *viz.*, INSAT system for satellite communication, broadcasting and meteorology and the Indian Remote Sensing satellite (IRS) system for natural resources management. India's Polar Satellite Launch vehicle (PSLV) is well proven through eight successive successful flights providing self-reliant launch capability for IRS & Kalpana type of satellites. The Geo synchronous Satellite Launch Vehicle (GSLV), capable of launching 2 Ton INSAT type of satellites, has been successfully flight tested and operationalised. India is one among the six countries in the world to demonstrate capabilities for geo-stationary satellite launch. In the area of space science, India has flown a few payloads in the past and now two dedicated science missions-Chandrayaan-1 and ASTROSAT are getting ready for a launch in the next two years.

#### **Outsourcing of Satellite building Services**

2542. SHRI B.J. PANDA: Will the PRIME MINISTER be pleased to state:

(a) whether it is proposed to outsource satellite building and launch-services to the private sector;

(b) if so, the details thereof;

(c) the estimated capacity to build satellites and whether the demand out-strips production, and

(d) the main objective of out-sourcing of this closely guarded system?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) and (b) It is ISRO's policy to outsource

[14 December, 2006]

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repetitive and routine fabrication of satellite and launch vehicle systems to qualified industries after building adequate safeguards in the contracts.

(c) The present demand of 3 to 4 satellites per year is being satisfactorily met from the industries as well as in-house capacity.

(d) The main objective of outsourcing the repetitive and routine fabrication activities to industry is to enable ISRO concentrate on research and development. The sensitive technologies are still kept within ISRO.

#### **Development of VSSC Thumba**

2543. SHRI THENNALA G. BALAKRISHNA PILLAI: Will the PRIME MINISTER be pleased to state:

(a) whether Government have any proposal for the Development of Vikram Sarabhai Space Research Centre (VSSC), Thumba, Trivandrum; and

(b) if so, the details thereof?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) and (b) Vikram Sarabhai Space Centre (VSSC) at Thiruvananthapuram is the lead Centre for design and development of launch vehicle systems. Apart from the ongoing programmes of Polar Satellite Launch Vehicle (PSLV), Geosynchronous Satellite Launch Vehicle (GSLV) and GSLV MkIII, VSSC is involved in the development of technologies for reusable launch vehicles, studies on manned space missions and long term research and development of advanced technologies. Suitable augmentation and development of facilities is an ongoing process based on the programmatic needs.

#### **Manned mission to space**

2544. SHRI RAJKUMAR DHOOT: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that ISRO has planned a manned space mission by 2014 and subsequently put a man on moon by 2020;

(b) if so, the details thereof;